



SYSTEM AND METHOD FOR EFFICIENT ILLUMINATION
IN COLOR PROJECTION DISPLAYS

ABSTRACT OF THE DISCLOSURE

A multilevel optical phase element is illuminated with a light source having a plurality of wavelengths of interest. The multilevel phase element disperses light from the light source by diffraction and focuses the dispersed light onto an imaging plane. A light modulating display in the imaging plane having a plurality of pixel elements is actuated. Each pixel element is assigned to transmit a predetermined spectral region within the near field region of the multilevel display element so as to receive the dispersed and focused light from the multilevel optical phase element. A system for displaying a color image includes a light source emitting a plurality of wavelengths of interest, a multilevel optical phase element, and a light modulating electronic display.